

REMARKS

Claims 1-14 and 26-38 are pending.

Claims 1-14 and 26-38 stand rejected.

Claims 15-26 are previously cancelled.

Claims 1, 2, 6-9, 11-14, 27, 28, 30, 31 and 34-38 are amended. No new matter is added.

35 USC §112 rejection of claims 1-14 and 27-38

Applicant appreciates the Examiners invitation to amend the claims to further clarify the features recited therein. Accordingly, claims 1, 2, 6-9, 11-14, 27, 28, 30, 31 and 34-38 are herein amended, such that Applicant believes the rejection is overcome.

35 USC §102 Rejection of claims 7-10, 34, 35, 37 and 38

Claims 7-10, 34, 35, 37 and 38 stand rejected under 35 USC §102(e) according to Brandin (US 6,493,813).

The rejection is traversed; however Applicant amends claims 7 to further clarify the subject matter and to facilitate bringing this case to allowance. Amended claim 7 recites, in part, an apparatus comprising:

- a hash table which stores a plurality of partial keys used to determine hashing conflicts, wherein said plurality of partial keys correspond to a plurality of original full keys;

- a hash function block coupled to the hash table that applies any polynomial to a full key and generates a partial key and a hash value which is used to point to one of the plurality of partial keys stored in the hash table, wherein the plurality of partial keys include saved bits comprising consecutive, sequentially strings of bits derived from the plurality of original full keys, and wherein the hash value includes bits from the full key that are not included in any of the partial keys; and

- a processor that compares one of the plurality of partial keys to the partial key comprising a majority of bits of the full key, wherein the hash value is not saved in the hash table.

Brandin describes a key 324 that is divided into three equal 64 bit partial keys to generate a concatenated extended transform 332 comprised of three transforms 326, 328 and 330 of 64 bits each (col. 7, lines 39-45 and FIG. 3B). Applicant respectfully submits

that the Examiner's characterization of the key 324 as being a partial key is incongruous with Brandin's describing the key 324 as including 196 bits that are divided into three equal 64 bit portions. Applicant similarly submits that it is improper to characterize combined multiple transforms or portions (e.g. A and B) of the key 324 as being a partial key. Specifically, Applicant respectfully disagrees with the Examiner's interpretation of transform (AB) 328 as including 128 bits. Brandin clearly identifies that the three transforms of 64 bits each as being concatenated to form the concatenated transform 332. That the Examiner's interpretation is further flawed is evidenced by the fact that the transform (ABC) 330 is not described as being the concatenated transform (of three 64 bit portions) but rather is itself combined with the transforms 326 and 328 to make the concatenated transform 332 (col. 7, lines 40-45 and FIG. 3B). Furthermore, transforms are not partial keys. Neither the three portions nor the three transforms describe a partial key that comprises a majority of bits of a full key, as recited by claim 7. Rather, any of the portions or transforms including 64 bits each are approximately one third of the 196 bit key 324 or the extended transform 332. One third is not a majority.

Amended claim 7 recites that the hash value includes bits from the full key that are not included in any of the partial keys. Brandin, on the other hand, describes that all the bits of the key 324 are included in the transforms 326, 328, 330 (col. 7, lines 40-45). On page 15, the Examiner identifies the transform as a hash value. It does not logically follow that the hash value can include bits from the full key that are not included in any of the partial keys, if the transforms include all the bits of the full key and also function as a hash value. As Brandin fails to disclose or teach all the features recited in amended claim 7, claim 7 is believed to be allowable over Brandin.

Claims 8-10 as amended, and as depending on claim 7, are also believed to be in a condition for allowance for the same or similar reasons. Claims 34, 35, 37 and 38 have been amended to include some of the same features as claims 7-10 are allowable for the same or similar reasons, in addition to the further novel features recited therein.

35 USC §103 Rejection

Claims 11 and 12 stand rejected under 35 USC 103(a) according to Brandin in view of Rajski et al. (US 2002/0016806).

Claims 1-4, 27-30 and 36 stand rejected under 35 USC 103(a) according to Brandin in view of Biran (US 6,345,347).

Claim 1 has been amended to recite, in part, a method comprising:

- storing a plurality of partial keys corresponding to an equal number of original keys in a hash table, wherein storage of the plurality of partial keys requires less memory than storage of the equal number of original keys, and wherein the plurality of partial keys are used to determine hashing conflicts;

- applying a hash function to an original key of the equal number of original keys to generate a partial key and a hash value, wherein the hash value includes a number of bits equal to a number of bits of the original key minus a number of bits of the partial key;

- accessing the hash table according to the hash value;

- reading a stored partial key of said plurality of partial keys from the hash table that corresponds to the hash value, wherein the hash value is not stored in the hash table; and

- executing a conflict check by comparing the partial key generated from the original key with the stored partial key.

The Examiner identifies a hash value as being an address 28 and confirmer 30 as applied to FIG. 13B. Applicant respectfully submits that the address 28 and confirmer 30 do not include a number of bits equal to a number of bits of the original key minus a number of bits of the partial key. Rather, the address 28 and confirmer 30 are provided as part of the transforms (col. 2, lines 31-36). As the Examiner has also identified the transform as a hash value (page 15 of the Office Action), Applicant points out that this also would fail to disclose wherein the hash value is not stored in a hash table, as recited by amended claim 1. All the data for the transforms of Brandin are saved at their respective addresses in memory store 200 (see FIGS. 9 and 10).

As acknowledged by the Examiner at page 13, Branding fails to disclose comparing keys or where the hash value is not stored in memory. Instead the Examiner cites Biran to disclose these features.

Biran directly compares the entire keys, however neither key is a partial key as recited by claim 1. Even assuming Biran teaches hash values that are not saved in a hash table, Biran fails to cure the deficiencies of Brandin since the hash values of Biran do not include a number of bits equal to a number of bits of the original key minus a number of bits of the partial key. There is no teaching or suggestion from this combination that a

hash value could be both not stored in a hash table while also include a number of bits of the original key minus a number of bits of the partial key. One skilled in the art would not be able to determine how Brandin's transforms could be combined with Biran's hash values to teach the hash values recited by claim 1. Biran fails to even disclose a partial key. Furthermore, combining the references to teach the features of claim 1 would make the transforms of Brandin inoperable. If bits are removed from Brandin's transforms to create a hash value, then the Brandin transforms would no longer operate to resolve a hashing conflict in the event that some or all of the remaining bits between partial keys matched. Brandin instead teaches that the transform generator must provide a unique transform for every possible key of a certain length (col. 2, lines 40-42). Brandin teaches that the extended transform 332 must therefore include all the bits of the key.

For all the above reasons, neither Brandin nor Biran alone or in combination suggest, teach, or otherwise disclose the novel features recited in claim 1 as amended. Claims 2-6 depend on claim 1 and are allowable for the same reasons in addition to the further novel features recited therein. Withdrawal of the rejection of claims 1-6 is respectfully requested.

Claims 27-38, as amended, include some of the features of claims 1-6, and are allowable for the same of similar reasons as discussed above, in addition to the further novel features recited therein. Therefore, withdrawal of the rejection of claims 27-38 is also respectfully requested.

Any statements made by Examiner that are not addressed by Applicant do not necessarily constitute agreement by the Applicant. In some cases Applicant may have amended or argued the allowability of independent claims thereby obviating grounds for rejection of the dependent claims.

CONCLUSION

For the foregoing reasons, reconsideration and allowance of the pending claims is requested. Please telephone the undersigned at (503) 224-2170 if it appears that an interview would be helpful in advancing the case.

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Respectfully submitted,
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